Excel5 - Mean Reversion System

Create a mean reversion system based on RSI indicator with the given dates and closing price (From 1996 to May 2017).

Backtest rules:

- RSI period – 14
- Buy below 30 RSI and Sell above 70 RSI

Create the trade list based on the results and calculate the XIRR, Drawdown and Trading Edge

Format for generating the signals and calculating the transaction price:

(This is the format that we have used for ease of calculation. You can create your own columns for the signal generation)

Date	Close	Change	Gain	Loss	Avergae Gain	Average Loss	RS	RSI	State	Signal	Stamp	Transaction Price

Trade list:

Trade List								
#	Buy	Sell	Begin	Qty	P/L	Ending	Win/Loss Probability	Drawdown

Performance Matrix:

XIRR Table	
Dates	Values
XIRR	

Performance Metrix
Total Trades
Winners
Losers
P(Winners)
P(Losers)
Average Win
Average Loss
Trading Edge

Drawdown Table	
Max Drawdown	

transaction price is close price

(Read about - RSI)

Steps to generate buy/sell signal based on RSI:

1. Calculate the change in closing price and calculate the gain and loss based on that
2. Calculate Average gain and Average loss for 14 period
3. Calculate the relative strength (RS)—Avg Gain/Avg Loss
4. Calculate the RSI indicator (RSI Indicator has a minimum value of 0 and max value of 100)
    a. RSI = 100 – (100/1+(RS))
    b. If RS is 0 then RSI should be 100
5. Generate buy signal if RSI < 30 and sell if RSI > 70
6. Transaction price is the closing price of that day

if rs is 0, rsi should be 0

not exactly contract value but equity value

Steps to create trade list:

1. Use initial equity – 1000000
2. Lookup the buy and sell price and calculate the quantity using the given initial equity
3. Calculate the PL (Rs)
4. Get the ending contract value (which will be used as the starting equity for the next trade)
5. Calculate the win/loss probability – Sellprice/Buyprice-1
6. Calculate the drawdown – Current Ending contract value/Max of all the previous ending contract values - 1
    a. A Drawdown refers to how much an investment is down from the peak before it recovers back to the peak

Performance Matrix:

1. XIRR calculation – Use the XIRR function of excel using the initial and ending equity and dates
2. Calculate the trading edge using the same method you used while creating your first trade sheet assignment
3. Max Drawdown – is the lowest number of the daily drawdown column

Important thing to remember – The backtest rule of 30 and 70 RSI and 14 period RSI should be an input on the top. If we want to change these numbers to 20/80 or 40/60, it should automatically show the results for those variables.